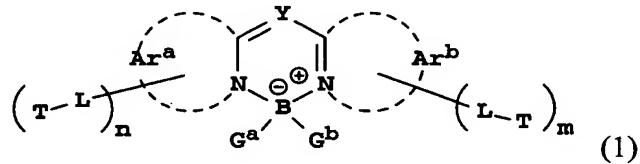


CLAIMS:

1. An electroluminescent device comprising a light-emitting layer containing a host and a light-emitting material wherein the light-emitting material comprises a boron complex containing boron complexed by two ring nitrogens of a deprotonated bis(aromatic)amine or bis(aromatic)methene ligand wherein the boron complex contains a tertiary amine substituent group.
5
2. The device of claim 1 wherein the tertiary amine substituent group is an aromatic tertiary amine group.
3. The device of claim 1 wherein the boron complex
10 comprises at least five rings.
4. The device of claim 1 wherein the boron complex emits blue light.
5. The device of claim 1 wherein the boron complex emits green light.
- 15 6. The device of claim 1 wherein the boron complex emits red light.
7. The device of claim 1 wherein the boron complex is represented by Formula (1):



20 wherein:

Ar^a and Ar^b each independently represent the atoms necessary to form a heteroaromatic ring group;
Y represents N or C-X, wherein X represents hydrogen or a substituent;
G^a and G^b represent independently selected substituents;
5 each L independently represents a bond or an independently selected linking group;
n is 1 or 2.
m is 0, 1, or 2; and
each T represents an independently selected substituent containing a
10 tertiary amine group;
provided that Ar^a and Ar^b may contain further substituents and provided that the L-T or other substituents may combine to form fused rings.

8. The device of claim 7 wherein G^a and G^b represent F.

9. The device of claim 7 wherein Ar^a and Ar^b each
15 independently represent the atoms necessary to form a six-membered heteroaromatic ring group;

10. The device of claim 7 wherein Ar^a represents the atoms necessary to form a six-membered heteroaromatic ring group and Ar^b represents the atoms necessary to form a five-membered heteroaromatic ring group.

20 11. The device of claim 7 wherein Ar^a and Ar^b each independently represent the atoms necessary to form a five-membered heteroaromatic ring group;

12. The device of claim 7 wherein n is 1 and m is 0 or 1.

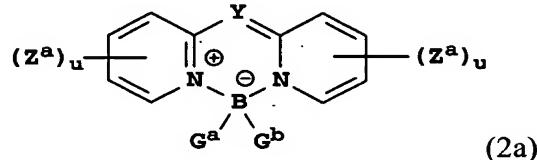
13. The device of claim 7 wherein T represents an aromatic tertiary amine.

14. The device of claim 7 wherein T represents $N(Ar^c)(Ar^d)$, wherein Ar^c and Ar^d represent independently selected aromatic groups provided 5 Ar^c and Ar^d may be bonded to one another.

15. The device of claim 7 wherein L represents a bond.

16. The device of claim 7 wherein L represents an aromatic linking group.

17. The device of claim 1 wherein the boron complex is 10 represented by Formula (2a):



wherein:

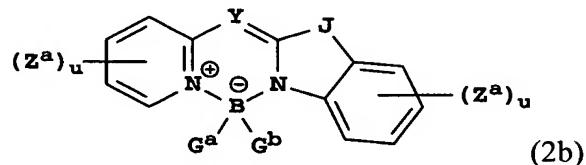
15 Y represents N or C-X, wherein X represents hydrogen or a substituent; G^a and G^b represent independently selected substituents; each Z^a represents an independently selected substituent, provided substituents may combine to form fused rings; each u independently is 0-4; and provided X or at least one of Z^a contains a tertiary amine. 20

18. The device of claim 17 wherein G^a and G^b represent F.

19. The device of claim 17 wherein Formula 2a comprises at least five rings.

20. The device of claim 1 wherein the boron complex is represented by Formula (2b):

5



wherein:

J represents O, S, Se, or N-A, wherein A represents a substituent;
Y represents N or C-X, wherein X represents hydrogen or a substituent;
G^a and G^b represent independently selected substituents;
each Z^a represents an independently selected substituent, provided
substituents may combine to form fused rings;
each u independently is 0-4;
and provided X, A or at least one of Z^a includes a tertiary amine.

15 21. The device of claim 20 wherein G^a and G^b represent F.

22. The device of claim 20 wherein Formula (2b) comprises at least five rings.

23. The device of claim 1 wherein the boron complex is represented by Formula (2c):

wherein:

J¹ and J² independently represent O, S, Se, or N-A, wherein A represents a substituent;

Y represents N or C-X, wherein X represents hydrogen or a substituent;;

G^a and G^b represent independently selected substituents;

5 each Z^a represents an independently selected substituent, provided substituents may combine to form fused rings;

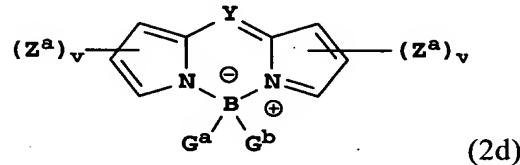
each u independently is 0-4;

and provided X, A or at least one of Z^a includes a tertiary amine.

24. The device of claim 23 wherein G^a and G^b represent F.

10 25. The device of claim 23 wherein Formula 2c comprises at least five rings.

26. The device of claim 1 wherein the boron complex is represented by Formula (2d):



(2d)

15 wherein:

Y represents N or C-X, wherein X represents hydrogen or a substituent;

each Z^a represents an independently selected substituent, provided

substituents my combine to form fused rings;

each v independently is 0-3;

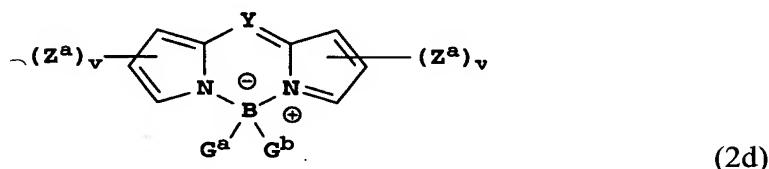
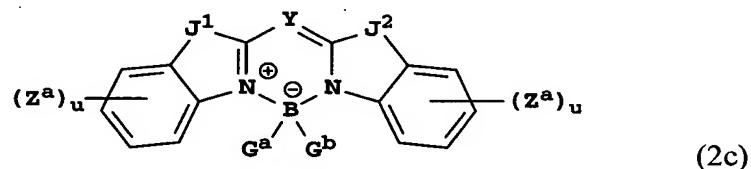
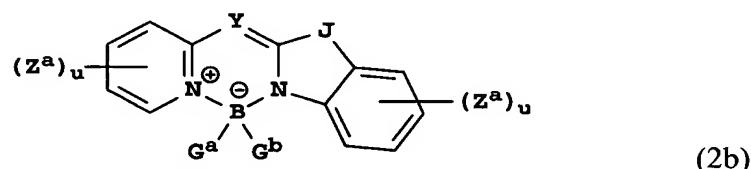
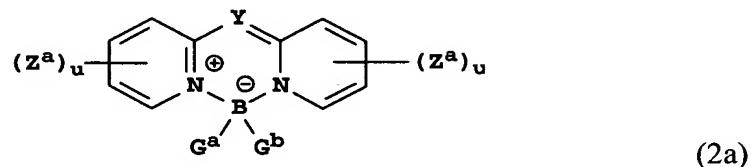
20 and provided that X or at least one of Z^a includes a tertiary amine.

27. The device of claim 26 wherein G^a and G^b represent F.

28. The device of claim 26 wherein Formula 2d comprises at least five rings.

29. The device of claim 1 wherein the boron complex is represented by Formula 2a, 2b, 2c, or 2d:

5



10 wherein:

J represents O, S, Se, or N-A, wherein A represents a substituent;

J¹ and J² independently represent O, S, Se, or N-A, wherein A represents a substituent;

Y represents N or C-X, wherein X represents hydrogen or a substituent;

15 G^a and G^b represent independently selected substituents;

each Z^a independently represents an independently selected substituent,

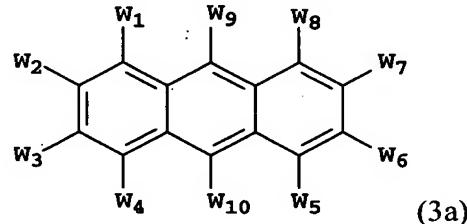
provided substituents may combine to form rings;

each u independently is 0-4;

each v is 0-3;

and provided X or A or at least one of Z^a, includes a tertiary amine.

30. The device of claim 1 wherein the host material comprises an anthracene compound of Formula 3a,

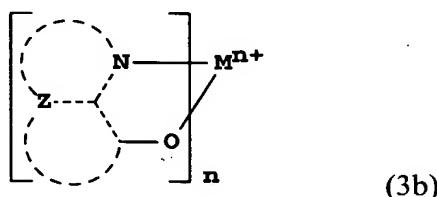


5 wherein:

W₁-W₁₀ independently represent hydrogen or an independently selected substituent, provided that substituents may combine to form fused rings.

31. The device of claim 30, wherein the host material is an 10 anthracene compound of Formula 3a, and W⁹ and W¹⁰ independently represent naphthyl groups or biphenyl groups.

32. The device of claim of 1 wherein the host material comprises a chelated oxinoid compound of Formula 3b,



15 wherein

M represents a metal;

n is an integer of from 1 to 4; and

Z independently in each occurrence represents the atoms completing a nucleus having at least two fused aromatic rings.

33. The device of claim 32 wherein the host material is a chelated oxinoid represented by Formula 3b, and M represents aluminum, n is 3, and Z represents the atoms necessary to complete a quinoline compound.

34. The device of claim 1 wherein the boron complex is from 5 0.5 to 10% by volume of the light-emitting layer.

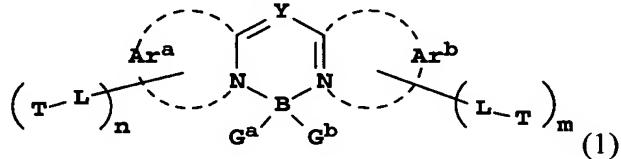
35. A display comprising the electroluminescent device of claim 1.

36. The device of claim 1 wherein white light is produced either directly or by using filters.

10 37. An area lighting device comprising the electroluminescent device of claim 1.

38. A process for emitting light comprising applying a potential across the device of claim 1.

39. A compound represented by Formula (1):



15 wherein:

Ar^a and Ar^b each independently represent the atoms necessary to form a heteroaromatic ring group;

Y represents N or C-X, wherein X represents hydrogen or a substituent;

20 G^a and G^b represent independently selected substituents; each L independently represents a bond or an independently selected linking group;

n is 1 or 2.

m is 0, 1, or 2; and

each T represents an independently selected tertiary amine containing group;

5 provided that Ar^a and Ar^b may contain further substituents and provided that the L-T or other substituents may combine to form fused rings.

40. The compound of claim 39 wherein Y represents N and G^a and G^b represent F.

10 41. The compound of claim 39 wherein L is an aromatic linking group.

42. The compound of claim 39 wherein Formula 1 comprises at least five rings.